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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,199	10/03/2006	Sergej Lopatin	LOPA3007/FJD	2830

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EXAMINER	
MILLER, ROSE MARY	
ART UNIT	PAPER NUMBER
2856	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,199	LOPATIN ET AL.	
	Examiner	Art Unit	
	ROSE M. MILLER	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/24/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it does not start with a full sentence. Correction is required. See MPEP § 608.01(b).

The abstract filed 24 October 2005 starts with “apparatus for" due to the deletion of the beginning of the sentence. It appears the beginning of the sentence was accidentally deleted.

Other problems arise from the number of deletions within the abstract which make it hard to determine what is actually in the abstract and make the abstract hard to read. Applicant is required to provide a clean copy of the abstract which includes correcting the problem of the incomplete sentence noted above in response to this office action.

Claim Objections

2. Claim 18 objected to because of the following informalities: the phrase “tow” should read --two--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12-22 are rejected as being indefinite as the phrase “a securement unit connected to said tube, with an end turned away from the process, and an end turned toward the process is embodied as a free end", found on lines 5-7 of claim 12, is confusing. From the specification, it appears the “end turned away from the process” refers to the recited tube. However, the phrase gives the connotation that it is the securement unit which has an end turned away from the process. A suggestion for correction is to utilize the phrase --a securement unit connected to a first end of said tube, said first end of the tube being turned away from the process and a second end of the tube being turned toward the process and embodied as a free end--. The makes it clear that "ends" are part of the tube and which end is secured by the securement unit and which is a “free end”.

Further confusion arises from the phrase "said internal oscillator is secured to said free end of said tube and has an end turned toward the process" found on lines 10-11 of claim 12. This gives the connotation that the end secured to the free end is turned away from the process. From the specification it is clear that this is not found in Applicant's invention. A suggestion for correction is to utilize the phrase -- said internal oscillator is secured to said free end of said tube by an end turned toward the process --.

Claims 13-22 are rejected as they fail to correct the problems of claim 12 from which they depend.

Claim 12 is further rejected as being indefinite as the phrase "said inner oscillator", found on line 7, lacks a proper antecedent basis. The claim refers to an "internal oscillator", not an "inner oscillator".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 12-16 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Umezawa et al. (US 5,247,832)** in view of **Pfeiffer (US 6,205,855 B1)**.

Umezawa et al. discloses an apparatus for determining and/or monitoring at least one physical or chemical process variable of a medium, comprising: at least one mechanically oscillatable unit which includes a tube (14) and an internal oscillator (12); a securement unit (5) connected to a first end of said tube (14), said first end of the tube being turned away from the process and a second end of the tube being turned toward the process and embodied as a free end (see Figures); said tube (14) surrounds said inner oscillator (12); and at least one driving/receiving unit (10, 16), said driving/receiving unit (16) excites said at least one mechanically oscillatable (14, 12) unit to oscillate, respectively, wherein said internal oscillator (12) is secured to said free end of said tube with an end turned toward the process (see Figures); said driving/receiving unit receives (10) the oscillations of said at least one mechanically oscillatable unit (14, 12); and said internal oscillator (12) has at least one groove/neck (see Figures).

Umezawa et al. discloses the claimed invention with the exception of specifically indicating that the at least one groove/neck determines at least the oscillation frequency of said at least one mechanically oscillatable unit.

Pfeiffer teaches at column 2 line 64 – column 3 line 26 that the oscillation frequency of an oscillatable unit (10), wherein the oscillatable unit is comprised of an external tube (16) and an internal oscillator (18, see column 2 lines 45-54), is formed by shape of the internal oscillator including a neck (constriction) formed within the internal oscillator (18).

Therefore, it is inherent in the system of **Umezawa et al.** that the shape of the internal oscillator determines the oscillation frequency of the mechanically oscillatable unit as **Pfeiffer** teaches that the shape of the internal oscillator reflects the natural oscillation frequency of the oscillatable unit.

With regards to claim13, **Umezawa et al.** discloses the groove/neck being located in the direction of the end of said internal oscillator turned toward the process (see Figures).

With regards to claim 14, **Umezawa et al.** discloses the claimed invention with the exception of an additional weight being provided in said securement unit. **Pfeiffer** teaches at

column 4 line 54 – column 5 line 35 tuning the resonant frequency of the oscillatable unit by providing a weight within the outer tube and positioning the weight in the right position to properly tune the oscillatable unit. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Umezawa et al.** with a weight in the securement unit as **Pfeiffer** teaches that the placement of a weight within the oscillatable unit will tune the resonant frequency of the oscillatable unit to the desired frequency.

With regards to claim 15, **Umezawa et al.** discloses the tube and/or the internal oscillator have/has one of: a round, elliptical, square and polygonal cross section (see column 4 lines 24-28).

With regards to claim 16, **Umezawa et al.** discloses the internal oscillator is one of: hollow, solid and partially hollow and partially solid (see column 4 lines 24-28).

With regards to claim 20, **Umezawa et al.** discloses the at least one driving/receiving unit (10) being positioned between end of said internal oscillator (12) turned toward the process and the end of said tube (14) turned toward the process (see Figure 2, column 4 lines 50-61).

With regards to claim 21, **Umezawa et al.** discloses the internal oscillator having at least a second groove/neck (12d).

With regards to claim 22, **Umezawa et al.** discloses the at least one driving/receiving unit (16) being positioned between said first groove/neck (see Figures 3-4, neck beside 12c) and said second groove/neck (12d).

9. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Umezawa et al.** in view of **Pfeiffer** as applied to claim 12 above, and further in view of **Getman et al. (US 5,969,621)**.

Umezawa et al. in view of **Pfeiffer** discloses the claimed invention with the exception of the at least one driving/receiving unit being only a single piezo unit which serves as a driving and receiving unit and wherein said piezo unit is a piezoelectric element, which is composed of at least two segments, which are polarized in mutually opposite directions, said polarization directions lie parallel to an axis of rotation of said at least one mechanically oscillatable unit.

Getman et al. teaches the use of a single piezo unit (2) which serves as a driving and receiving unit for an oscillatable unit (14). **Getman et al.** further discloses the single piezo unit being a piezoelectric element which is composed of at least two segments which are polarized in mutually opposite directions (see column 4 line 48 – column 5 line 51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Umezawa et al.** in view of **Pfeiffer** with the piezo unit of **Getman et al.**, including the at least two polarized segments, as **Getman et al.** discloses at column 4 lines 31-36 that the disclosed piezo unit would work equally well within a system with only one oscillating bar or with no oscillating bar to provide the proper oscillation to the oscillatable unit.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Umezawa et al.** in view of **Pfeiffer** as applied to claim 12 above, and further in view of **Dual et al. (US 4,920,787)**.

Umezawa et al. in view of **Pfeiffer** discloses at least two piezo units being provided in said at least one driving/receiving unit (16, 10), with least one piezo unit serving as driving unit (16) and at least one piezo unit serving as receiving unit (10).

Umezawa et al. in view of **Pfeiffer** discloses the claimed invention with the exception of said at least two piezo units being piezo units of the driving/receiving unit being positioned at the same position. **Dual et al.** teaches that it is known to oscillate an oscillatable unit with at least two piezo units (7, 8), with at least one piezo unit serving as a driving unit (8) and at least one piezo unit serving as a receiving unit (7). Therefore it would have been obvious to one of ordinary skill in the art to provide the system of **Umezawa et al.** in view of **Pfeiffer** with the driving/receiving unit of **Dual et al.** as **Dual et al.** teaches the advantages of having the driving unit/receiving unit in a single location on an oscillatable unit, such advantages including simplifying the wiring for the oscillatable unit.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Benz et al. (US 4,499,765) discloses a device for the determination and/or control of a certain charging level in a container.

Umezawa (US 4,740,726) discloses a vibrator-type level sensor.

Gallagher (US 5,670,709) discloses a transducer for the measurement of attributes of flowable media.

Kawakatsu (US 6,105,425) discloses a vibration type level detector.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSE M. MILLER whose telephone number is (571)272-2199. The examiner can normally be reached on Monday - Friday, 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RMM/
22 June 2008
/Hezron Williams/
Supervisory Patent Examiner, Art Unit 2856